

**Notice of Allowability**

Application No.

10/609,476

Examiner

Stephen W. Smoot

Applicant(s)

FUJIOKA ET AL

Art Unit

2813

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to applicant's amendment filed on 17 November 2004.
2. ☒ The allowed claim(s) is/are 1-35.
3. ☒ The drawings filed on 01 July 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 8-30-04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

*Stephen W. Smoot*  
Patent Examiner / AU 2813

## **DETAILED ACTION**

This Office action is in response to applicant's amendment filed on 17 November 2004.

### ***Allowable Subject Matter***

1. Claims 1-35 are allowed.
2. The following is an examiner's statement of reasons for allowance:
  - Claims 1-11 are allowed because the prior art of record does not teach or suggest, in combination with the other claim limitations, a method for manufacturing a semiconductor device that includes forming a metal oxide film on a semiconductor substrate utilizing a dual stage deposition step with a first stage that includes introducing both a material gas and an oxidizing gas and a second stage for subsequently introducing a second oxidizing gas, wherein the flow rate of the oxidizing gas is less than the flow rate of the second oxidizing gas, and wherein the dual stage deposition step is repeated two or more times;
  - Claims 12-24 are allowed because the prior art of record does not teach or suggest, in combination with the other claim limitations, a method for

Art Unit: 2813

manufacturing a semiconductor device that includes forming an insulating film corresponding to a capacitor formed on a semiconductor substrate utilizing a dual stage deposition step with a first stage that includes introducing both a material gas and an oxidizing gas and a second stage for subsequently introducing a second oxidizing gas, wherein the flow rate of the oxidizing gas is less than the flow rate of the second oxidizing gas, and wherein the dual stage deposition step is repeated two or more times; and

- Claims 25-35 are allowed because the prior art of record does not teach or suggest, in combination with the other claim limitations, a method for manufacturing a semiconductor device that includes forming a metal oxide film on a semiconductor substrate utilizing a dual stage deposition step with a first stage that includes introducing both a material gas and an oxidizing gas, wherein the material gas contains a metal that corresponds to the metal of the metal oxide, and a second stage for subsequently introducing a second oxidizing gas, wherein the flow rate of the oxidizing gas is less than the flow rate of the second oxidizing gas, and wherein the dual stage deposition step is repeated two or more times.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen W. Smoot whose telephone number is 571-272-1698. The examiner can normally be reached on M-F (8:00 am to 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SWS